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MODIFIED APPLICATION

English Translation of the PCT Specification  
with Amendments under Art.34 reflected

of

PCT/JP2002/009091

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AMENDMENT (According to Article 11)

To: Mr. Commissioner of the Patent Office

1 Identification of the International Application

5 PCT/JP02/09091

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4 Item to be Amended

Description, Claims

5 Contents of Amendment

(1) to (3) The first paragraph in page 2 has been amended as follows:

20 A method for making pallets using plant fibers according to the present invention as  
 defined in claim 1 comprises the steps of: preparing unwoven fabric of randomly tangled  
 plant fibers; impregnating the unwoven fabric with resin to provide a sheet of base material;  
 sandwiching and pressurizing the sheet of base material between upper and lower metal  
 molds **having a plurality of hot-air vents made throughout their confronting areas;** and  
 25 heating the sheet of base material thus sandwiched by hot air blowing from one to the other  
 metal mold **via the hot-air vents** to shape the sheet of base material into a pallet **with**  
**recesses formed on its surface in consequence of the hot-air vents.**

(4) to (5) The third paragraph in page 2 has been amended as follows:

30 An apparatus for making pallets according to claim 3 comprises: upper and lower  
 metal molds confronting each other; a plurality of **through-holes hot-air vents** made  
 throughout confronting areas of both the upper and lower metal molds; and a hot-air  
 generating means having a hot-air outlet and a hot-air inlet to which the **through-holes**  
**hot-air vents** of the upper and lower metal molds are connected respectively and vice versa,  
 thereby permitting hot air to circulate and pass through between the upper and lower metal  
 35 molds **to provide a pallet with recesses formed on its surface in consequence of the**  
**hot-air vents.**

(6) A new paragraph as below is added as the last paragraph of "Summary of the Invention" in page 2.

**An apparatus for making pallets according to claim 4 comprises additional hot-air vents provided in circumference of the metal molds as described in claim 3.**

(7) to (8) The first paragraph in the section "Industrial Applicability" has been amended as follows:

As mentioned above, the present invention provides a method for making pallets using plant fibers, the method comprising the steps of: preparing unwoven fabric of randomly tangles plant fibers; impregnating the unwoven fabric with resin to provide a sheet of base material; sandwiching the sheet of base material between upper and lower metal molds; heating and pressurizing the sheet of base material thus sandwiched by hot air blowing from hot-air vents ~~at the end of a hot-air channel~~ formed in the metal molds to provide a pallet. Therefore, heat is efficiently conducted through the base material with hot air passing there through, thereby shortening manufacturing time to produce a pallet. **Further advantageously, the pallet is formed with recesses on its surface in consequence of the hot-air vents, thereby preventing goods from slipping off from the pallet.**

(9) A new paragraph as below is added as the last paragraph in page 5.

**With the present invention as defined in claim 4, additional hot-air vents are provided in circumference of said metal molds, thereby permitting an even hardening of resin both in circumference and other parts of the pallet.**

(10) Claims 1 and 3 are amended as in the attached new page of CLAIMS.

(11) Claim 4 is added as in the attached new page of CLAIMS.

(12) Figs. 1, 2, and 5 are replaced by the attached new pages of DRAWINGS.

6 List of Attached Documents

- |                          |               |
|--------------------------|---------------|
| (1) New page 2           | one copy      |
| (2) New page 5           | one copy      |
| (3) New CLAIMS (page 6)  | one copy      |
| (4) New Fig. 1, 2, and 5 | one copy each |

REPLACED BY  
ART 34 AMDT

#### Summary of the Invention:

A method for making pallets using plant fibers according to the present invention as defined in claim 1 comprises the steps of: preparing unwoven fabric of randomly tangled plant fibers; impregnating the unwoven fabric with resin to provide a sheet of base material;  
5 sandwiching and pressurizing the sheet of base material between upper and lower metal molds having a plurality of hot-air vents made throughout their confronting areas; and heating the sheet of base material thus sandwiched by hot air blowing from one to the other metal mold via the hot-air vents to shape the sheet of base material into a pallet with recesses formed on its surface in consequence of the hot-air vents.

10 In a method for making pallets using plant fibers according to the present invention as defined in claim 2, the randomly tangled plant fibers in claim 1 are prepared by separating the plant fibers from crushed shells of hard-shelled nut-like fruits such as coconut shells and oily coconut shells, or from certain plants such as jute. It is characterized that practically all types of plant fibers can be applied according to the present invention.

15 An apparatus for making pallets according to claim 3 comprises: upper and lower metal molds confronting each other; a plurality of hot-air vents made throughout confronting areas of both the upper and lower metal molds; and a hot-air generating means having a hot-air outlet and a hot-air inlet to which the hot-air vents of the upper and lower metal molds are connected respectively and vice versa, thereby permitting hot air to circulate and pass through  
20 between the upper and lower metal molds to provide a pallet with recesses formed on its surface in consequence of the hot-air vents.

An apparatus for making pallets according to claim 4 comprises additional hot-air vents provided in circumference of the metal molds as described in claim 3.

#### 25 Brief Description of the Drawings

Fig.1 illustrates an apparatus for making pallets according to one preferred embodiment of the present invention;

Fig.2 is a perspective view of one example of pallet made according to the present invention;

30 Fig.3 is a front view of two pallets of Fig.1 laid on each other, integrally connected together;

Fig.4 is a perspective view of another example of pallet made according to the present invention;

35 Fig.5 illustrates an apparatus according to another embodiment of the present invention for making flat plate members;

with Fig.1), and the rod-like members 10 having a "U"-shape in its cross section are cut out from the folded board 14.

The flat plate members 9 and the rod-like members 10 are combined and fastened together by applying adhesive agent or by bolting to provide the pallet as shown in Fig.4.

5 This type of pallets needs additional assembly process, but is advantageous in that various sizes of pallets can be made to meet occasional demands.

#### Industrial Applicability:

10 As mentioned above, the present invention provides a method for making pallets using plant fibers, the method comprising the steps of: preparing unwoven fabric of randomly tangles plant fibers; impregnating the unwoven fabric with resin to provide a sheet of base material; sandwiching the sheet of base material between upper and lower metal molds; heating and pressurizing the sheet of base material thus sandwiched by hot air blowing from hot-air vents formed in the metal molds to provide a pallet. Therefore, heat is efficiently conducted through  
15 the base material with hot air passing there through, thereby shortening manufacturing time to produce a pallet. Further advantageously, the pallet is formed with recesses on its surface in consequence of the hot-air vents, thereby preventing goods from slipping off from the pallet.

20 With the present invention as defined in claim 2, the plant fibers are prepared by separating them from crushed shells of hard-shelled nut-like fruits such as coconut shells and oily coconut shells, or from certain plants such as jute, thereby effectively reducing costs of raw materials.

With the present invention as defined in claim 3, hot air is circulated and reheated, thereby effectively reducing the amount of fuel required for a heat generating means.

25 With the present invention as defined in claim 4, additional hot-air vents are provided in circumference of said metal molds, thereby permitting an even hardening of resin both in circumference and other parts of the pallet.

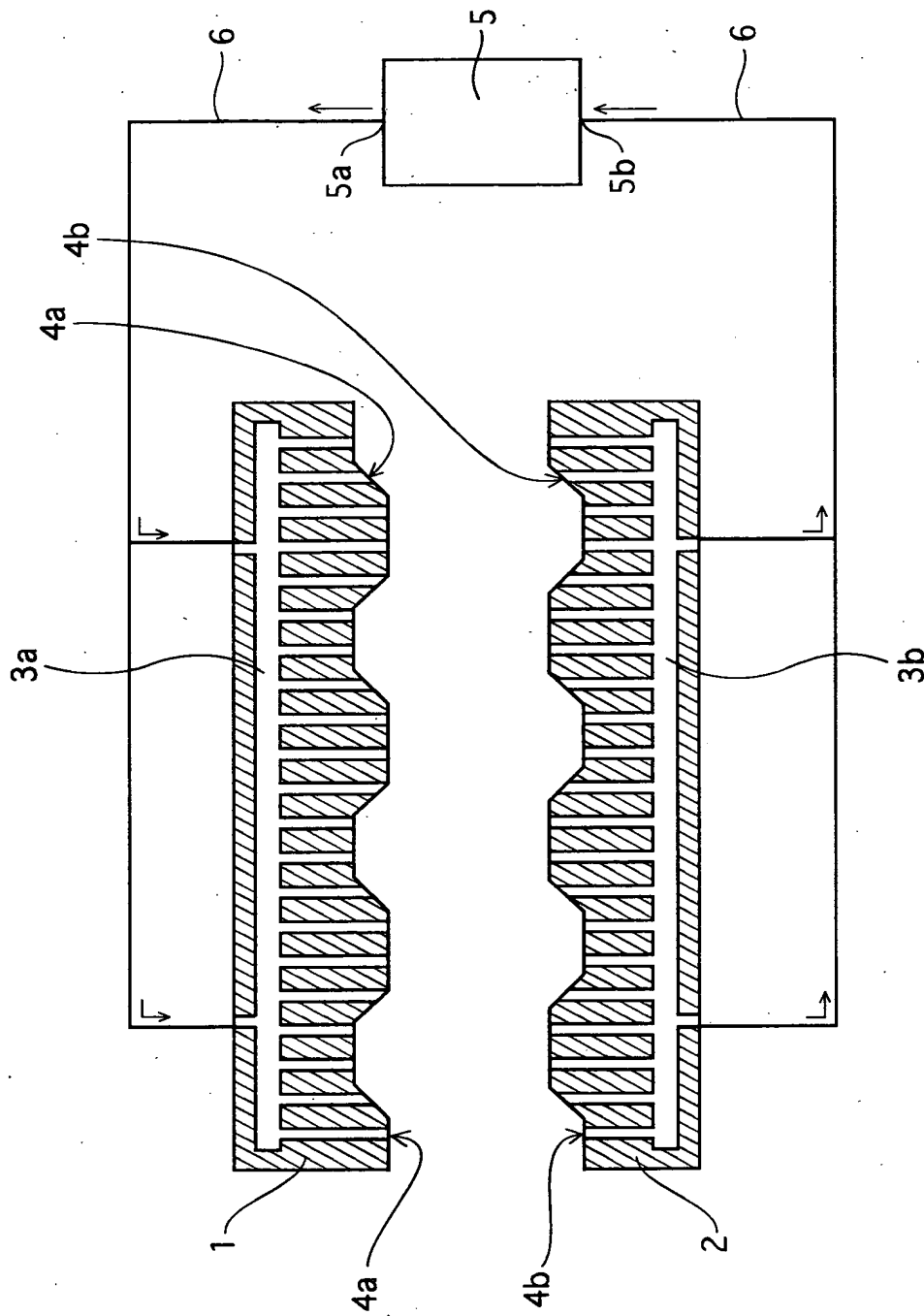
## CLAIMS

**REPLACED BY  
ART 34 AMDT**

1. A method for making pallets from plant fibers comprising the steps of:  
preparing unwoven fabric of randomly tangled plant fibers;  
5       impregnating the unwoven fabric with resin to provide a sheet of base material;  
      sandwiching and pressurizing the sheet of base material between upper and lower metal  
      molds having a plurality of hot-air vents made throughout their confronting areas; and  
      heating the sheet of base material thus sandwiched by hot air blowing from one to the  
10       other metal mold via the hot-air vents to shape the sheet of base material into a pallet with  
      recesses formed on its surface in consequence of the hot-air vents.
2. A method for making pallets according to claim 1, wherein the randomly tangled plant  
      fibers are prepared by separating the plant fibers from crushed shells of hard-shelled nut-like  
      fruits such as coconut shells and oily coconut shells, or from certain plants such as jute.
3. An apparatus for making pallets comprising: upper and lower metal molds confronting each  
15       other; a plurality of hot-air vents made throughout confronting areas of both the upper and  
      lower metal molds; and a hot-air generating means having a hot-air outlet and a hot-air inlet  
      to which the hot-air vents of the upper and lower metal molds are connected respectively  
      and vice versa, thereby permitting hot air to circulate and pass through between the upper  
      and lower metal molds via the hot-air vents to provide a pallet with recesses formed on its  
20       surface in consequence of the hot-air vents.
4. An apparatus for making pallets according to claim 3, wherein additional hot-air vents are  
      provided in circumference of said metal molds.

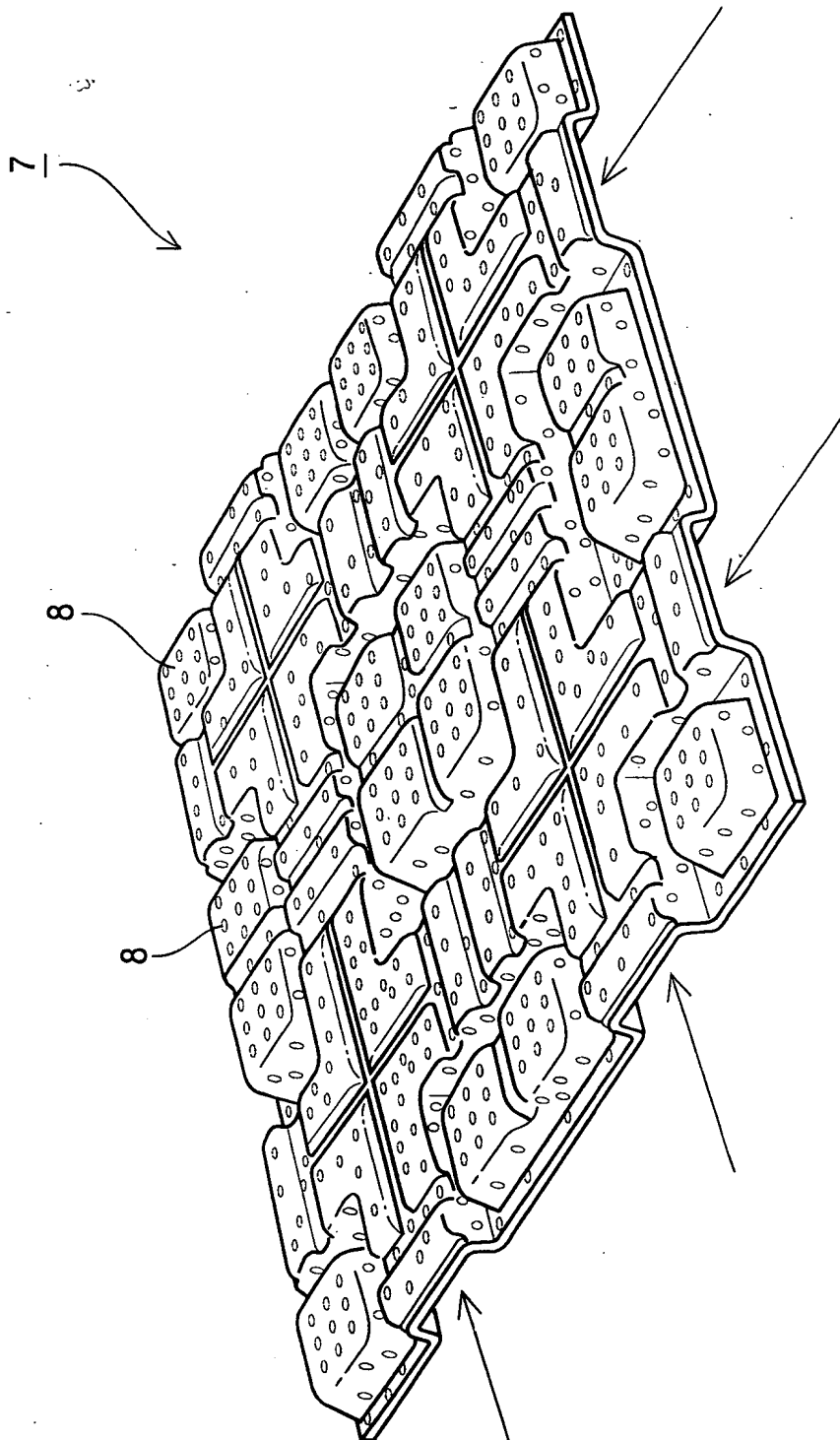
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Fig 1



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Fig 2





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Fig 5

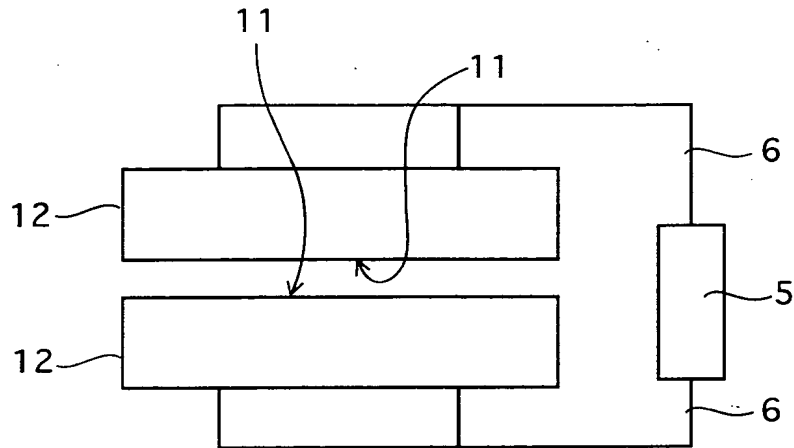


Fig 6

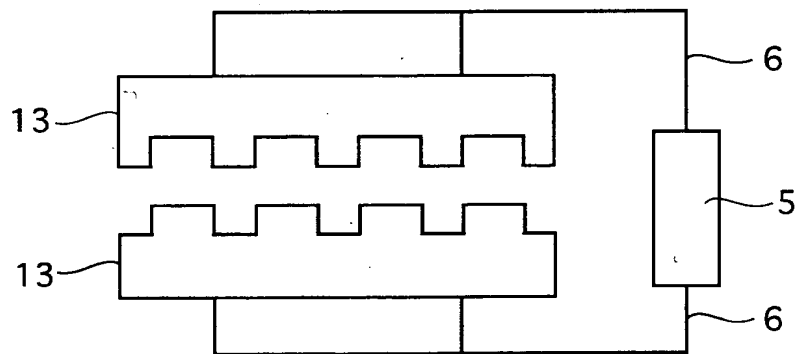


Fig 7

